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Applicants: Sandro CAMPESTRINI et al

Serial No.: 09/786,077

Group Art Unit: 1751

Filed: February 28, 2001

Examiner: Gregory R. Delcolto

For: The Use of An Aliphatic-Aromatic Diacyl Peroxide in a Bleaching Composition

DECLARATION UNDER 37 C.F.R. 1.132 OF STEFANO SCALLIA

Mail Stop Fee Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Stefano Scialla declares that:

1. He is an inventor of and is familiar with U.S. Application Serial No. 09/786,077 filed February 28, 2001, and is familiar with the rejection in this application under 35 U.S.C. § 103 based on U.S. Patent No. 5,338,474 to Kaiserman et al. or the published PCT application WO Patent No. 98/03621 to Ofosu-Asante et al.
2. From September 5, 1988 to the present, he has been employed by The Procter & Gamble Company of Cincinnati, Ohio, or a company related thereto.
3. Attached herewith are two typical industry resources which evidence the well known harshness of benzoyl peroxide (BPO), a diaryl peroxide, with respect to fabric color safety. Copies of "Chemical Spots, Stains and Discoloration of Home Furnishings" published electronically by the Institute of Agriculture and Natural Resources of the University of Nebraska, and "Drycleaning", published electronically as part of the Better Business Bureau's Consumer Information Series, are included herein as Exhibit A. The former document

contains five paragraphs on page 3 directed to the damage caused to dyes and upholster fabrics by benzoyl peroxide, and specifically states that "benzoyl peroxide is a strong oxidizing and/or bleaching agent which is capable of destroying most dyes used in carpet and upholstery fabrics. Other textiles such as pillowcases, sheets, towels and clothing may be affected also. Manufacturers have estimated that a high percentage of unidentifiable spots on carpets can be attributed to this chemical. The latter document contains a reference to benzoyl peroxide on page 4, stating that "skin care preparations containing benzoyl peroxide also require special care in use. Benzoyl peroxide is a bleaching agent and can cause permanent areas of color loss on towels and clothing." These are but two examples of over one hundred relevant hits when the terms "benzoyl peroxide", fabric, color and damage, are entered into the YAHOO internet search engine.

4. Experiments were conducted under his direction and control for the purpose of determining the color fabric safety of mixed aryl-alkyl diacyl peroxides (hereinafter DAPs). The procedures and results of the experiments are described herein.

5. A mixed linear-aromatic DAP structure, benzoyl lauroyl peroxides, hereinafter BLP, was assessed for fabric color safety under both typical recommended usage conditions (10 minute pretreatment) and typical misuse conditions (24 hour pretreatment). Specifically, dyed fabrics were contacted with bleach-containing compositions comprising 0.5% by weight of the composition of BLP and having a pH of between about 2 and about 5. The compositions further included from 0.01% to 30%, by weight of the composition, of a bleach activator, and a surfactant system comprised of at least one surfactant. For comparison, similar compositions which omitted the BLP were subjected to the same processing conditions with the same types of fabrics. Eighteen dyes known to be H_2O_2 -sensitive were monitored for stability.

In the 10 minute pretreatment, the eighteen dyes all exhibited similar stability with respect to the BLP-containing compositions verses the BLP-free compositions, thereby evidencing good fabric color safety by the compositions containing BLP. This result was very different from the result which would have been obtained with BPO, which is known to cause significant damage to both H_2O_2 -sensitive dyes and more durable dyes, even during brief fabric contact.

In the 24 hour pretreatment, the thirteen of the eighteen dyes exhibited similar stability with respect to the BLP-containing compositions verses the BLP-free compositions, thereby evidencing fairly good fabric color safety by the compositions containing BLP. The five dyes which exhibited some change in color when contacted with the BLP-containing compositions verses the BLP-free compositions were typically blue. The stability of the thirteen dyes was also very different from the result which would have been obtained with BPO, which is known to cause significant damage to both H_2O_2 -sensitive dyes and more durable dyes upon prolonged contact with fabric.

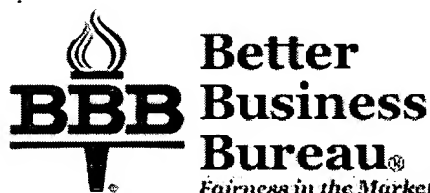
6. The superior fabric color safety afforded by the use of BLP, a mixed linear-aromatic DAP, when compared to BPO, a diaromatic DAPs would not have been apparent to one of ordinary skill in the art from the teachings of either Kaiserman or Ofosu-Asante. In particular, the only DAP disclosed in the Kaiserman specification is BPO which, as evidenced above in paragraph 3, is commonly known by ordinary practitioners of detergent arts as being harsh with respect to fabric color safety. In addition, neither Kaiserman nor Ofosu-Asanta contain teachings with regard to fabric color safety.

8. Stefano Scialla further declares that all statements made herein of his own knowledge are true, and all statements made on information and belief are believed to be true; and further that these statements have been made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under

Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing therefrom.

Dated: July 11th, 2003

Stefano Scialla
Stefano Scialla

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Drycleaning

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What Is Drycleaning? ▲

Drycleaning is the use of solvents to remove soil and stains from fabric. It is called "drycleaning" because the solvents contain little or no water and do not penetrate the fibers as water does. Drycleaning solvent is not harmful to any fabric, and drycleaning is the only safe method for cleaning many types of garments.

Natural fibers such as wools and silks will shrink and perhaps lose their color when washed in water, but will dryclean beautifully. Cottons and linens, unless they are preshrunk in manufacture, will also shrink in home laundering. Drycleaning is particularly effective in removing greasy, oily stains from synthetic fibers, which have an affinity for oils.

But the professional drycleaner provides more than just drycleaning. This service also includes professional removal of problem stains that will not come out with simple drycleaning. It also includes professional pressing, careful packaging, and inspections at every step along the way to make sure that all stains have been attended to and the item has been properly pressed and finished.

Drycleaning can extend the life of your wardrobe, and your knowledge about drycleaning can bring you more value for your clothing dollar.

Selecting Clothing ▲

Buying new clothes is often an exciting event, related to special events, holidays, and great expectations. But, it is also the time to think about the serviceability and cleaning requirements of the garment.

Care Labels ▲

Before you buy, read the care label attached to the garment and any hang tags or care instructions on garment packaging. The Federal Trade Commission requires apparel manufacturers to attach permanent labels to garments supplying instructions for drycleaning or laundering. Look for this label when you are considering a purchase. The care necessary to keep a garment clean and attractive may be important in deciding whether to buy it in the first place.

Most garments that are labeled with washing instructions are also drycleanable, but some may contain dyes or trim that are not resistant to drycleaning solvent. If you have a difficult stain on such a garment, or if you want the convenience or the enhanced appearance of professional cleaning and finishing, discuss the article with your drycleaner. According to the amended federal care label rule of January 1984, no warning about an alternative cleaning method is required, so your cleaner may ask you to sign a release before drycleaning a garment with washing instructions only.

Fabrics ▲

Great technological advances have been made in both the improvement of natural fibers and the creation and development of synthetic fibers. Special finishes impart body, permanent press qualities, water repellency, and other qualities to fabrics. Fibers are blended to obtain fabrics with the best qualities of both natural and synthetic materials. But there is much you should know about the peculiarities of various fabrics and constructions.

- Many beautiful fibers lack durability and should be purchased only with this understanding. These include cashmere, camel's hair, and mohair. Angora, another luxury fiber, can shrink excessively even with the most careful care in cleaning.
- Lightweight and loosely woven wools, gauzes, and loosely knit sweaters have a tendency to snag easily or become distorted in wear and cleaning.
- Suede and smooth leathers have a high incidence of color difficulties. Genuine suede and leather items require special processing to preserve their finish, feel, and color. These garments should only be handled by cleaners equipped for this specialized job.
- Imitation suede and leather may become stiff or peel in drycleaning. These items are often accepted for cleaning only at owner's risk.
- Suede-like materials and other materials with a flocked finish may develop bare spots in wear and cleaning. The life expectancy for these garments is generally rather short.
- Many tailored garments contain interfacings in the collar and lapel that are fused rather than stitched to the shell fabric. In some cases, blisters and wrinkles develop when these items are drycleaned. This is the fault of the manufacturer.
- Some bonded fabrics may separate from the face fabric or lining, or there may be shrinkage, puckering, stiffening, or adhesive staining.
- Acrylic knits are inclined to stretch when wet or when exposed to steam in finishing after drycleaning.
- Some dyes and pigment prints may fade in drycleaning solvents. Others are water soluble and may fade when exposed to water in spot removal.

Color ▲

It is impossible to determine simply by looking at the fabric whether the color will

withstand exposure to sunlight, water, drycleaning solvent, or various spot removal agents or chemicals. Reading labels and tags may give you some information. Some blue jeans and other denim items are labeled "guaranteed to fade," for example.

Colors are applied either as dyes, which are absorbed into the fibers, or as pigments, which adhere to the fabric surface. Usually both are reasonably colorfast. Some colors however, are totally unserviceable, not fast in either water or drycleaning solvent. And some colors "crock," or rub off on the skin or other fabrics.

Some dyes are called "fugitive" dyes, because they will run, rub off, or bleed onto other fabrics. Pigment prints and metallic prints are held to the fabric with an adhesive, and may wear off over time, from wear as well as cleaning.

Some dyes fade on exposure to strong light, especially sunlight, but sometimes strong artificial light as well. Some dyes change color on exposure to combustion gases present in the air. This is called "fume fading," and is especially common in acetate fabrics.

Decorative Trims ▲

In addition to fabric and color, you must also be concerned with how buttons, beads, sequins, and other decorations and fasteners will hold up to drycleaning.

Most troublesome in this respect are buttons and beads made of polystyrene, which softens or melts on exposure to drycleaning solvent.

Beads and sequins may be covered with a thin coating of color, which may come off during wear or cleaning. Beads or sequins may be merely glued on and come off during wear or in cleaning. Trim that is sewn on with a single continuous thread may all come off if the thread is broken.

Belts or other items that contain cardboard stiffeners or glues will require special attention.

According to the Federal Trade Commission care label rule, trims must be able to withstand the recommended care process, so if you do have a problem, you should return the article to the retailer.

Care In Use ▲

Who has not had the experience of spilling something on a garment on its first wearing, fresh from the cleaners? It seems wasteful at such times to send an entire garment back to be cleaned again simply to remove one little spot. But spot removal at home should be undertaken only with great care. Improper use of water or chemicals in removing spots at home sometimes sets the stains or damages the color. Water can loosen soil or sizing and displace it, causing a "ring" that looks worse than the original stain.

The resurgence of natural fibers such as silk and wool make it even more difficult to remove stains safely at home. Silk should never be rubbed when wet. This causes fibers to break, resulting in a permanent light area. Wool is difficult because often the staining substance will be absorbed deep into the fibers.

Spillage of food and beverages is probably the most common cause of spots on clothing. Many of these are combination stains containing oils, sugars, and other staining substances. These stains may take more than one procedure to remove completely. Stains from beverages containing sugar may seem to disappear, but will show up later when the sugar caramelizes in response to age or exposure or heat.

Another cause of accidental stains is the many ordinary chemicals found in your bathroom cabinet. These agents may also leave stains that aren't visible at first but become visible later. This phenomenon is particularly true with protein fibers such as silk or wool. Such stains need immediate attention.

Alcohol in perfumes and colognes can be damaging to silk. It is a good idea to use these products and let them dry before you get dressed.

Skin care preparations containing benzoyl peroxide also require special care in use. Benzoyl peroxide is a bleaching agent and can cause permanent areas of color loss on towels and clothing.

Be careful, also, in handling chlorine bleach. Bleach spillage can cause color loss and weaken fabric to the extent that holes appear when the garment is next washed or cleaned. Exposure to acids, such as in car batteries, can also cause disintegration of fabrics.

Good first aid for stains is to blot up the staining substance at once. Don't rub a stain. This may make it penetrate further into the fibers and may damage the fabric surface. Consult a stain removal guide or call your drycleaner before attempting further action at home. And never return a stained garment to the closet. Spots and stains set with age, and food spills attract insects, which can do permanent damage.

Getting the Most From Drycleaning ▲

If you have been alert at the time of purchase and careful while wearing your clothes, you can help your drycleaner to give you the very best service. Be sure to inform the cleaner of any spots or stains, especially if they are colorless spills. The cleaner will want to treat some stains before the drycleaning process.

Bring with you any hang tags that contain extra care instructions of fiber information. Acrylic knits, for example, are difficult to identify and are inclined to stretch with the heat of cleaning and finishing. So if you know what fibers the garment contains, tell the cleaner.

Point out the presence of items containing glues, plastics, or cardboard stiffeners. And point out any special trims you are concerned about.

Outfits with several pieces and any accessories, such as belts, should all be cleaned at the same time to avoid any color discrepancies resulting from any cleaning.

Knits that have shrunk can often be shaped back to size if you ask for this service. Sizing, which is applied during manufacture to give a garment body or shape, can be removed after one or more cleanings, as can water repellent and spot repellent finishes. These finishes can be restored if you ask your cleaner to do so. Your cleaner can also provide professional repairs and alterations, garment storage, and other clothes care services.

After Cleaning ▲

You may not always be completely satisfied with the way your clothes come back from the cleaner, even if you have followed our suggestions. Look at your drycleaned clothes as soon as they are returned to you and point out any problems right away. Some problems may be curable, such as a spot that was missed or an inadequate pressing job. Some wools and synthetics may show pilling, the appearance of tiny balls on the fabric surface. Cleaning may increase their number, but sometimes your cleaner can remove them.

Although drycleaning does prolong their life, clothes, like people, eventually show their age, and some problems the cleaner can do nothing about.

Fluorescent brighteners, used by garment makers to make colors brighter or whites whiter, may become dull or yellowed with exposure to sunlight. This may not be apparent until a good cleaning job removes surface soil that may have masked the condition. Insects often finish their meal leaving the skeleton of the fabric intact. The weakened fibers are flushed away in cleaning and the garment comes back full of holes. Chemical damage sustained in use may also not be obvious until after cleaning.

If you feel that damage to your garments was caused through no fault of your own, read the Liability for Damaged Clothing section carefully.

Liability for Damaged Clothing ▲

If clothing comes back damaged from the drycleaner, the drycleaner is often blamed as the last to handle the garment. But the responsibility may lie with the manufacturer or retailer, or with you -- the consumer.

As mentioned before, care information must be permanently attached to all garments. If this information is not present and the garment is damaged as a result, or if care instructions are followed and the garment or some component part fails, the responsibility is with the manufacturer. Your best recourse is to go to the retailer who sold you the item. Good retail practice requires that a store exchange a defective item or refund the price.

If the information was available to you but you did not follow it, for example washing a garment that should have been drycleaned, then you are at fault.

If your drycleaner fails to follow care instructions or did not exercise reasonable care, then the cleaner is at fault.

Some stains simply can't be removed by any known method, and while no one is to blame, there is no remedy. This is also true of the damaging effects of age on all fabrics.

If your drycleaner is to blame, you are entitled to recover the value of the garment's remaining life expectancy. According to the **International Fair Claims Guide for Consumer Textile Products**, published by the International Fabricare Institute, suits are expected to last 2 to 4 years, dresses 1 to 5 years, coats 4 years (fur coats 10 years), and dress shirts 2 years. The guide assigns such life expectancy ratings to all categories of textile products, and it provides tables by which to determine the worth of a product based on the unused portion of its life expectancy and its condition at the time it was lost or ruined. It is

up to you to negotiate an adjustment with cleaner.

If there is disagreement about the party responsible for the adverse condition, it is suggested that the item be sent to the Textile Analysis Laboratory at the International Fabricare Institute for testing and determination of the party responsible. Such items can be submitted by the member drycleaner, retailer, Better Business Bureau, consumer protection agency, or textile affiliate. Items cannot be submitted directly by the consumer. Most cases are successfully settled, however, when the customer first returns the article to the cleaner.

Coin Machine Cleaning ▲

As pointed out earlier, actual drycleaning is only a part of the service provided by the professional drycleaner. But you can get good results from coin machines, especially in removing oily, greasy stains. Here are some suggestions:

- Check pockets for lipsticks, pens, matches, and other items that might create stains.
- Clean light colored fabrics separately from dark ones.
- Clean fragile clothing separately from heavy clothing.
- Brush out lint-catching areas such as cuffs and pockets.
- Read and follow the operating instructions carefully.
- Do not overload the machine.

After machine cleaning, articles should be removed immediately and hung to prevent wrinkling. If cleaning solvent odor clings to the clothes, hang them in the open air in a well-ventilated room until all odor is evaporated.

Draperies ▲

Draperies have a number of invisible enemies. The sun can fade and streak them. (Sometimes you will not notice this until the soil is removed.) Draperies are also affected by gases, fumes, and humidity. Open fireplaces, wood stoves, and smoking also contribute to the staining of draperies.

You can expect some shrinkage from laundering or cleaning unless the fabric has been preshrunk. Sometimes the drape shrinks more than the lining, causing a puckered effect.

A variety of draperies are combined with insulating backings or linings. In selecting these draperies, make sure you know the specific care procedure the manufacture recommends. Some of these coatings react adversely in both drycleaning and washing.

The International Fabricare Institute recommends that glass fiber draperies be washed and air dried rather than drycleaned, to avoid color loss and chalky streaks. Care must be taken to subject them to as little abrasion as possible.

If you make your own draperies the following suggestions may be helpful:

- Pick the right fabric for the job. For sunny locations, use fabrics that are resistant to deterioration from sunlight. Synthetics are more resistant than cellulose fibers, while silk is least resistant.
- Line all draperies for protection against fading and fiber rotting.
- If you are using cotton and rayon fabrics, allow for changes in length caused by atmospheric changes. These fibers tend to expand when the relative humidity is high and contract when it is low.
- Remember that synthetic fibers pick up dust due to static electricity and that cotton and rayon tend to yellow as they age.
- Use care in sewing to avoid seam puckering. Select the proper thread, use sharp needles, and check thread tension. Experiment for proper spacing of stitches and run your machine at a slow, constant speed. Remember, thread sewn under tension shrinks in laundering or when steam pressed.
- Follow cleaning and pressing requirements carefully, according to the type of fabric.

Whether you make or purchase your draperies, they will last longer if they are cleaned or laundered at least once a year and vacuum cleaned between cleanings.

Tips to Remember ▲

At The Time Of Purchase

- Read all labels and tags and examine the article's construction.
- Check with salespeople about possible problems in care.
- Save labels, hang tags, and sales slips.

At Home

- Be careful about spills and attend to them quickly.
- Check a spot removal guide before attempting home spot removal.

At The Time Of Cleaning

- Be sure a label is present or tell the drycleaner about care instructions and fiber content.
- Identify spots with a note pinned to the garment.
- Ask about special care for decorative trim.

- Check all pockets before leaving clothes.
- Ask for replacement of sizing or water repellency and repairs or alterations if needed.

After Cleaning

- Inspect articles immediately.
- Ask for your cleaner's help in correcting mishaps.

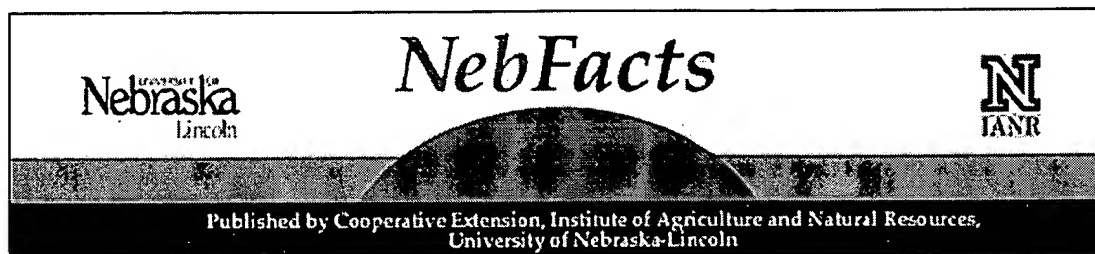
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Chemical Spots, Stains and Discoloration of Home Furnishings

Shirley Niemeyer, Extension Specialist, Home Environment

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We live in a world of chemicals. Unfortunately, some of the characteristics that make household chemical products the most useful are the same qualities that lead to trouble when these products are carelessly handled. A chemical stain or spot is a serious kind of stain that is appearing with increasing frequency and is different from ordinary stains. This type of discoloration or color loss is caused by a variety of chemical ingredients contained in dozens of common household products.

Basically, there are two types of spots that can appear on home furnishing fabric. The first type of spot is the common stain which occurs when food is spilled or ordinary dirt or oily substance is tracked in. These spots are usually apparent immediately and action can be taken to remove them without damage to the carpet or upholstery fabric.

The second type of stain or discoloration of carpets and home furnishings fabrics is the chemical stain. The chemical stain is caused by the introduction of foreign substances to the surface of the textile product, which actually changes or destroys the dye. The time between contact and appearance of the stain could be days or months. Generally, nothing can be done to restore the dye to its original color.

Some of the more common chemical products known to cause problems include medications (especially acne medications), certain cosmetics, household bleaches, disinfectants, furniture polish, certain plant foods, fertilizers and insecticides. One fiber manufacturer has estimated the number of household products which can cause stains or spots on home furnishings products to be in excess of 50.

The mechanism by which these spots appear varies with different types of chemicals, environmental conditions and the particular textile product involved.

For example, spots can appear suddenly with no apparent history of contact with a known injurious substance. The chemical can lie dormant until a change in humidity, temperature, moisture or sunlight occurs to activate the chemical reaction. This delayed action causes the spots to seem to appear

spontaneously.

Relatively high humidity is necessary for bleaching action to begin. Similarly, many chemical agents require wetness to trigger reaction. This means that discoloration could result shortly after a textile product is cleaned. Frequently the professional cleaner is falsely suspected of being the cause.

You may ask why carpet manufacturers do not use better dyes, ones that will resist all chemical reaction. There are few known dyes which are resistant to chemical degradation. Such dyes have limited application and a restricted choice of colors.

Since there are no dyes which will resist all chemical attack, and manufacturers cannot prevent their products from coming into contact with these substances, chemical spots and stains are not covered under most manufacturers' warranties. However, dyes have improved.

Prevention of Chemical Spots and Stains

From the consumer's point of view, the only real solution to prevention of chemical spots and stains is careful use of the offending chemical products. By identifying the particular product, one can take precautions to prevent further contamination.

This is not always easy because a list of ingredients in many of these products is not always available. The advantage in knowing what is in the product is questionable because the concentration of the products used, or the combination of the chemicals within the product, can affect what it will do to a carpet or other household textile products.

It is most important that the consumer carefully read and comply with directions. Special attention should be given to precautions or warnings supplied by the manufacturer of household chemical products.

Potential Sources of Chemical Spots and Stains

The list of generic products published here is not a complete list nor is this report intended to be a criticism of any product. The purpose is to enable consumers to identify products which can cause damage to textile products if they are spilled or allowed to come in contact with them.

Acne Medications and Skin Creams

Many consumer products have been introduced over the last few years which contain benzoyl peroxide as an active ingredient. These products include acne medications, fade or age creams, some foot care preparations and some pet shampoos.

Benzoyl peroxide is a strong oxidizing and/or bleaching agent which is capable of destroying most dyes used in carpet and upholstery fabrics. Other textiles such as pillowcases, sheets, towels and clothing may be affected also. Manufacturers have estimated that a high percentage of unidentifiable spots on carpets can be attributed to this chemical.

Spots caused by benzoyl peroxide may appear hours, days or months after the contamination, depending on temperature and humidity. This means that the original source of the spill could have been forgotten by the time the spot appears.

An additional problem with this chemical is that compounds containing benzoyl peroxide are not water soluble. They are difficult to wash off the hands or face. The user may believe the substance has been washed off when it really has not.

Most benzoyl peroxide spots begin as orange or dark yellow depending on the dyestuff used. As time and the oxidation process progress the yellow stain will get lighter in color. On blue carpets, however these spots may appear slightly pinkish or white. In some cases the spot may appear to be yellow with an orange halo around it, moving toward yellow as the spot grows.

The consumer must know that benzoyl peroxide is present on the textile item in order to attempt to save it before the reaction takes place and destroys the dyestuff. Carpet cleaners recommend the consumer not attempt to remove the spill. Contact a professional carpet cleaner and restorer skilled in removal of benzoyl peroxide.

Bleaches

Most people are aware that misuse of household bleaches on colored fabric may remove the color as well as stubborn stains. Accidental spills on carpets and upholstery fabrics are equally damaging.

Chlorine bleaches (sodium hypochlorite) are the most universally used. The so-called "all-fabric" bleaches (oxygen bleach), although slower acting, can cause bleaching and dye bleeding. Swimming pool chemicals (calcium hypochlorite) tracked into the home can bleach carpets and rugs. Also, most mildew stoppers contain bleach which will affect textiles if used improperly.

Spots caused by chlorine products are generally yellow. However, chlorine will cause some red dyestuffs to turn green.

Acids and Alkalis

As little as 1 percent of hydrochloric acid in solution can cause pink or orange spots in carpets. Stomach acid is essentially 10 percent hydrochloric acid. This means that vomit can cause permanent spots on carpets and upholstery if not promptly removed and/or neutralized.

Some toilet bowl cleaners contain as much as 10 percent hydrochloric acid. Corn and callous removers contain phosphoric and glacial acetic acid. Tile cleaners also contain acid which can cause color changes as do certain foot preparations. Hydrochloric acid can cause some red dyestuffs to turn bright blue.

Strong alkaline substances are equally damaging when they come in contact with carpets and other textile products. The active ingredient in most drain cleaners is sodium hydroxide (lye). Oven cleaners may get their cleaning power from sodium hydroxide. Strong alkalis will destroy the fabric itself, as well as cause spots and stains.

Urine Stains

Urine from children and pets can cause permanent stains to some fabrics if not promptly removed. The characteristic ammonia-like odor will be replaced by a musty odor. Spots caused by urine may be a dull yellow or even red.

Plant Foods and Fertilizer

Spills of some liquid plant foods or leakage from house plants can cause color changes in carpet. Spots of this kind usually develop near the backing and progress upward through the pile to the surface. Stains of this type may not be apparent for months. Spots are usually dull yellow in color.

Insecticides

Some pesticides and insecticides can cause discoloration or color loss of carpet. Chemicals may cause fading around baseboards when spray is directed to the carpet instead of the baseboard, or when spray is applied to household plants. Follow label directions and spray only when necessary. Protect the carpet with drop cloths. A greater potential for color change exists with repeated applications.

Furniture Polish

Chemicals in furniture polish can act as a catalytic agent, destroying red carpet dyes and creating green or bluish discoloration. On carpet this usually occurs around the base of a piece of furniture and can remain hidden until the furniture is relocated.

Phenols

This class of chemicals is used in disinfectants and germicides. Bathroom cleaners, many of which come in concentrated liquid form, may contain this chemical. Some phenols have been known to cause carpet to fade.

How to Identify Chemical Spots and Stains

The following suggestions may be helpful in identifying the cause of chemical spots and stains on carpets and other textile products:

- Where is the Spot Located in the House? In teenagers' rooms, one would suspect acne medications containing benzoyl peroxide when stains appear on towels, bedsheets, and carpets. Discoloration or color loss along baseboards suggests insecticides. In the living or dining room where houseplants are kept, it could be leakage from pots containing plant food or from plant sprays. Stains around the base of furniture could be contamination from furniture polish. The important thing is to isolate the cause of the spot and take whatever steps are necessary to prevent future exposure.
- Was the Chemical Substance Spilled or Tracked onto the carpet from some other area? The pattern of the stain indicates how it happened. Spills often resemble explosions. They are generally larger in diameter near the backing than on the surface. Tracking commonly leaves a clearly defined shape like a handprint or footprint. Tracking stains are usually limited to the tips of the tufts. Where tracks come from could indicate the cause.
- What Color are the Spots? Different chemicals react differently to different colors and dyestuffs. As we have noted, they also react differently under various climatic conditions. In general, red spots on tan or beige carpet may suggest strong acids. Yellow stains indicate reactions caused by strong oxidizers or bleaches. Green or blue stains may indicate sunlight combined with a catalyst.

Treatment

In general, once a textile product has been chemically stained, there is little that can be done by the

individual to restore the material to its original color and condition. If a stain has occurred, the source of contamination should be identified and steps taken to prevent further contamination from the same cause. The homeowner can prevent spots from occurring in the first place by showing proper respect for household chemicals and treating them with due caution. Consult a professional cleaner.

"Plugging" the carpet with a patch can be done to remove the damaged area.

Source

Textile Manufacturers Institute, 1101 Connecticut Avenue, NW, Washington, DC 20036

In cooperation with: Science and Education Administration, Extension Service, United States Department of Agriculture, Washington, DC.



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